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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------|
| 09/636,783 | 08/11/2000 | Hidefumi Yamashita | 13783 (JP9-1999-0150 US1) | 8476 |
| 7590 11/30/2004 | | | EXAMINER | |
| Scully Scott Murphy & Presser 400 Garden City Plaza Garden City, NY 11530 | | | NGUYEN, HOAN C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2871 | |
| DATE MAILED: 11/30/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/636,783

Applicant(s)

YAMASHITA ET AL.

Examiner

HOAN C. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 9/17/04
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's arguments with respect to Amended claims 15 and 17-18 based on the amendment filed on December 2, 2003 have been considered but are moot in view of the new ground(s) of rejection. Therefore, this is Final action.

Applicant cancelled claims 1-14 and 16. Therefore, ONLY claims 15 and 17-18 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan et al. (US5831710A) in view of Carrington (US5459598A).

Colgan et al. teach (Figs. 2 and 6-7) a liquid crystal display device which has first and second substrates disposed with a predetermined gap, and seals a liquid crystal in the gap, comprising:

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- a seal member (adhesive 52) provided at the gap between said first and second substrates (substrate 40 and cover 50), said seal member being disposed outside a display area to seal said liquid crystal 53;
- a wall-like structure (barrier 25) disposed outside the display area and inside the seal member,

wherein there is provided a column-like structure for keeping the gap between said first and second substrates constant, and a shape of said wall-like structure is determined based on a state of said column-like structure, said wall-like structure being made of a different material from that of said seal member and formed in plural rows (col. 5, lines 18-23); said wall-like structure is composed of dashed rows such that the notches in one row of said plural wall-like structures are always offset relative to the notches in another row of said wall-like structures along the lengths of said wall-like structure so that said seal material does not flow directly into said display area from exteriorly of said wall-like structures; said notches of said wall-like structure are formed alternately or offset in the plurality of dashed rows so that said seal material does not flow directly into said display area (col. 5, lines 18-23).

wherein (Figs. 2 and 7)

- positions of the notches of the plural dashed rows in said wall-like structure are determined based on a position of a wiring formed either on said first substrate or on said second substrate (Fig. 7).

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- a column-like structure for keeping the gap between said first and second substrates constant is provided, and a shape of said wall-like structure is determined based on a state of said column-like structure.

Claim 17:

- said seal member flows out in a fluidized state when said second substrate is pressed into said first substrate while heating said first and second substrates, and said wall-like structure is capable of stopping said seal member from entering said display area, through said staggered notched walls 25 as shown in Figs. 2 and 7, said seal member being in a fluidized state, and permitting said liquid crystal to flow into outside the wall-like structure when said liquid crystal flows out from said display area. The technique of sealing the seal member and injecting the liquid crystal materials is inherent.

Claim 18:

- it is well-known art that said wall like structure is formed by applying photosensitive resin onto said first substrate, performing a UV exposure for the resin using a photomask to pattern the wall-like structure, and curing the resin to harden the resin. it is also well-known art that an alignment film is applied after the formation of said wall-like structure for regulating orientation the liquid crystal molecules.

However, Colgan et al. fail to disclose a liquid crystal display device with the wall-like structure formed to a height lower than that of the gap formed between said

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first substrate and said second substrate, wherein a minor space is formed between a free end of said wall-like structure and the adjacent substrate for reducing the meniscus of liquid crystal material flowing through the space.

Carrington teaches (Fig. 4) a liquid crystal display device, wherein said wall-like structure (barrier 14) is formed to a height lower than that of the gap formed between said first substrate and said second wherein a minor space is formed between a free end of said wall-like structure and the adjacent substrate for reducing the meniscus of liquid crystal material flowing through the minor space for preventing surface forces and/or residual trapped gas complete penetration of the liquid crystal material into the cavities of minor space.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Colgan et al. disclosed with (a) wall like structure formed by applying photosensitive resin onto said first substrate, performing a UV exposure for the resin using a photomask to pattern the wall-like structure, and curing the resin to harden the resin; (b) an alignment film applied after the formation of said wall-like structure for regulating orientation the liquid crystal molecules into domains; and (c) the wall-like structure is formed to a height lower than that of the gap formed between said first substrate and said second substrate wherein a minor space is formed between a free end of said wall-like structure and the adjacent substrate for reducing the meniscus of liquid crystal

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material flowing through the minor space for preventing surface forces and/or residual trapped gas complete penetration of the liquid crystal material into the cavities of minor space as taught by Carrington (col. 4 lines 27-29).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

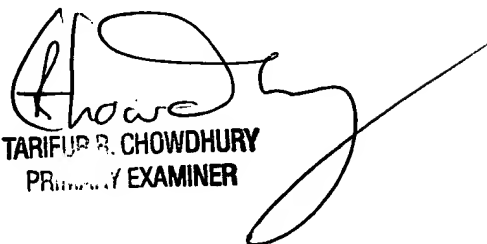
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN
Examiner
Art Unit 2871

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TARIFUR R. CHOWDHURY
PRIMARY EXAMINER